I/O module - AXL F AI4 I 1H - 2688491

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Axioline F analog input module, 4 inputs: 0 - 20 mA, 4 - 20 mA, ±20 mA, 2, 3, and 4-conductor connection technology, integrated sensor supply (including bus base module and connectors)

Product description

The module is designed for use within an Axioline F station.
It is used to acquire analog current signals.

Product Features

- 4 analog, bipolar input channels for the connection of current signals
- Connection of sensors in 2, 3, and 4-wire technology
- Current ranges: 0 mA ... 20 mA, 4 mA ... 20 mA, ±20 mA
- Bus-synchronous scanning of input signals
- Simultaneous scanning of all channels by means of simultaneous sampling
- High crosstalk attenuation between the channels, thanks to separate signal paths
- Particularly robust against electromagnetic interference
- Device rating plate stored
- Diagnostic and status indicators

Key commercial data

Packing unit	1 pc
Weight per Piece (excluding packing)	200.0 GRM
Custom tariff number	85389091
Country of origin	Germany

Technical data

Dimensions

Width	35 mm
Height	126.1 mm
Depth	54 mm

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Technical data

Dimensions

Note on dimensions	The depth is valid when a TH 35-7.5 DIN rail is used (according to EN 60715).

Ambient conditions

Ambient temperature (operation)	-25 °C ... 60 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Permissible humidity (operation)	5 % ... 95 % (non-condensing)
Permissible humidity (storage/transport)	5 % ... 95 % (non-condensing)
Air pressure (operation)	70 kPa ... 106 kPa (up to 3000 m above sea level)
Air pressure (storage/transport)	70 kPa ... 106 kPa (up to 3000 m above sea level)
Degree of protection	IP20

Connection data

Designation	Axioline F connector
Connection method	Push-in technology
Conductor cross section solid min.	0.2 mm²
Conductor cross section solid max.	1.5 mm²
Conductor cross section stranded min.	0.2 mm²
Conductor cross section stranded max.	1.5 mm²
Conductor cross section AWG/kcmil min.	24
Conductor cross section AWG/kcmil max	16
Stripping length	8 mm

General

Weight	145 g
Note on weight specifications	with connectors and bus base module
Mounting type	DIN rail
Protection class	III, IEC 61140, EN 61140, VDE 0140-1
Test section	5 V communications power (logic), 24 V supply (I/O) 500 V AC 50 Hz 1 min
	5 V supply (logic)/analog inputs 500 V AC 50 Hz 1 min
	5 V supply (logic)/functional earth ground 500 V AC 50 Hz 1 min
	24 V supply (I/O)/analog inputs 500 V AC 50 Hz 1 min
	24 V supply (I/O) / functional earth ground 500 V AC 50 Hz 1 min
	Analog inputs/functional earth ground 500 V AC 50 Hz 1 min
Conformance with EMC directives	Noise immunity test in accordance with EN 61000-6-2 Electrostatic discharge (ESD) EN 61000-4-2/IEC 61000-4-2 Criterion B; 6 kV contact discharge, 8 kV air discharge
	Noise immunity test in accordance with EN 61000-6-2 Electromagnetic fields EN 61000-4-3/IEC 61000-4-3 Criterion A; Field intensity: 10 V/m
	Noise immunity test in accordance with EN 61000-6-2 Fast transients (burst) EN 61000-4-4/IEC 61000-4-4 Criterion B, 2 kV

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General

	Noise immunity test in accordance with EN 61000-6-2 Transient surge voltage (surge) EN 61000-4-5/IEC 61000-4-5 Criterion B; supply lines DC: ±0.5 kV/±0.5 kV (symmetrical/asymmetrical); ±1 kV to shielded I/O cables
	Noise immunity test in accordance with EN 61000-6-2 Conducted interference EN 61000-4-6/IEC 61000-4-6 Criterion A; Test voltage 10 V
	Noise emission test according to EN 61000-6-3 Radio interference properties EN 55022 Class B
Mechanical tests	Vibration resistance in acc. with EN 60068-2-6/IEC 60068-2-6 5 g
	Shock in acc. with EN 60068-2-27/IEC 60068-2-27 30 g, 11 ms period, half-sine shock pulse
	Continuous shock according to EN 60068-2-27/IEC 60068-2-27 10 g

Interfaces

Designation	Axioline F local bus
Connection method	Bus base module
Transmission speed	100 MBit/s

Axioline potentials

Communications power U_{Bus}	5 V DC (via bus base module)
Current consumption from U_{Bus}	typ. 120 mA
	max. 150 mA
Supply of analog modules U_A	24 V DC
Current consumption from U_A	typ. 38 mA
	max. 45 mA

Analog inputs

Number of inputs	max. 4 (differential inputs, current)
Connection method	Push-in technology
	2, 3, 4-wire (shielded)
Input name	Analog inputs
A/D conversion time	31.25 µs
Resolution A/D	16 bit
Limit frequency (3 dB)	30 Hz
	12 kHz (in fast mode)
Type of protection	Transient protection of inputs
Protective circuit/component	Suppressor diode
Data formats	IB IL, S7-compatible
Measured value representation	16 bits (15 bits + sign bit)
Current input signal	0 mA ... 20 mA
	4 mA ... 20 mA

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Analog inputs

	-20 mA ... 20 mA
Precision	0.1 % (of measuring range final value for active mean-value generation and 30 Hz filter)
Input filter	30 Hz, 12 kHz and mean-value generation (can be parameterized)
Number of inputs	4 (differential inputs, current)
Type of protection	Overload protection
Protective circuit/component	No; ±5.2 V DC, maximum, I_{max} = 50 mA
Open circuit response	Going to 0 mA; open-circuit detection from 4 mA ... 20 mA

Classifications

eCl@ss

eCl@ss 4.0	27240404
eCl@ss 4.1	27240404
eCl@ss 5.0	27242204
eCl@ss 5.1	27242604
eCl@ss 6.0	27242604
eCl@ss 7.0	27242604
eCl@ss 8.0	27242601

ETIM

ETIM 3.0	EC001599
ETIM 4.0	EC001435
ETIM 5.0	EC001596

UNSPSC

UNSPSC 6.01	43172015
UNSPSC 7.0901	43201404
UNSPSC 11	39121311
UNSPSC 12.01	39121311
UNSPSC 13.2	39121311

Approvals

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UL Listed / cUL Listed / BSH / RINA / DNV / cULus Listed

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Approvals

Ex Approvals

Approvals submitted

Approval details

UL Listed

cUL Listed

BSH

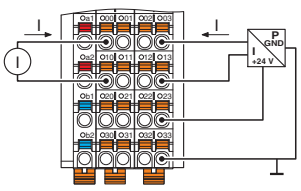
RINA

DNV

cULus Listed

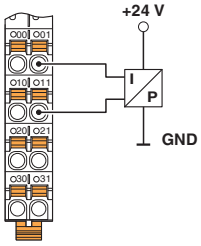
Drawings

Connection diagram



Connection for current measurment

Connection diagram



Passive pressure sensor at a differential current input

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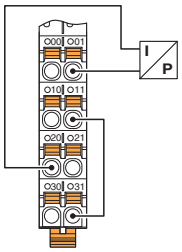
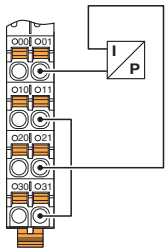
Connection diagram



Differential current input with passive 2-wire transmitter (current loop)

Connection diagram



Differential current input with passive 2-wire transmitter (current loop)

Dimensioned drawing